SEQUENCE LISTING

<110> Donoho, Gregory
Scoville, John
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Zambrowicz, Brian
Sands, Arthur T.

<120> Novel Human Membrane Proteins and
Polynucleotides Encoding the Same

<130> LEX-0104-USA

<150> US 60/169,427
<151> 1999-12-07

<160> 53

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<212> DNA
<213> Homo sapiens

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20 25 30
Leu Gly Ser Asn Asn Met Tyr Asp Ile Phe Asn Leu Asn Asp Lys Ala
35 40 45
Leu Cys Phe Thr Lys Cys Arg Gln Ser Gly Ser Asp Ser Cys Asn Val
50 55 60

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Glu Asn Leu Gln Arg Tyr Trp Leu Asn Tyr Glu Ala His Leu Met Lys
65                  70                  75                  80
Glu Gly Leu Thr Gln Lys Val Asn Thr Pro Phe Leu Lys Ala Leu Val
                85                  90                  95
Gln Asn Leu Ser Thr Asn Thr Ala Glu Asp Phe Tyr Phe Ser Leu Glu
            100                 105                 110
Pro Ser Gln Val Pro Arg Gln Val Met Lys Asp Glu Asp Lys Pro Pro
        115                 120                 125
Asp Arg Val Arg Leu Pro Lys Ser Leu Phe Arg Ser Leu Pro Gly Asn
    130                 135                 140
Arg Ser Val Val Arg Leu Ala Val Thr Ile Leu Asp Ile Gly Pro Gly
145                 150                 155                 160
Thr Leu Phe Lys Gly Pro Arg Leu Gly Leu Gly Asp Gly Ser Gly Val
                165                 170                 175
Leu Asn Asn Arg Leu Val Gly Leu Ser Val Gly Gln Met His Val Thr
            180                 185                 190
Lys Leu Ala Glu Pro Leu Glu Ile Val Phe Ser His Gln Arg Pro Pro
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Pro Val Ser Pro Leu Leu Arg Pro Gly Ser His Cys Arg Ala Asp Arg
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Thr
225
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<212> DNA
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atcttcaact tgaatgacaa ggctttgtgc ttcaccaagt gcaggcagtc gggcagcgac     180
tcctgcaatg tggaaaactt gcagagatac tggctaaact acgaggccca tctgatgaag     240
gaaggtttga cgcagaaggt gaacacgcct ttcctgaagg ctttggtcca gaacctcagc     300
accaacactg cagaagactt ctatttctct ctggagccct ctcaggttcc gaggcaggtg     360
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gtcttctctc accagcgacc gccccctaac atgaccctca cctgtgtatt ctgggatgtg     660
actaaaggga ccactggaga ctggtcttct gagggctgct ccacggaggt cagacctgag     720
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<212> PRT
<213> Homo sapiens

<400> 4

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            20                  25                  30
Leu Gly Ser Asn Asn Met Tyr Asp Ile Phe Asn Leu Asn Asp Lys Ala
        35                  40                  45
Leu Cys Phe Thr Lys Cys Arg Gln Ser Gly Ser Asp Ser Cys Asn Val
    50                  55                  60
Glu Asn Leu Gln Arg Tyr Trp Leu Asn Tyr Glu Ala His Leu Met Lys
65                  70                  75                  80
Glu Gly Leu Thr Gln Lys Val Asn Thr Pro Phe Leu Lys Ala Leu Val
                85                  90                  95
Gln Asn Leu Ser Thr Asn Thr Ala Glu Asp Phe Tyr Phe Ser Leu Glu
            100                 105                 110
Pro Ser Gln Val Pro Arg Gln Val Met Lys Asp Glu Asp Lys Pro Pro
        115                 120                 125
Asp Arg Val Arg Leu Pro Lys Ser Leu Phe Arg Ser Leu Pro Gly Asn
    130                 135                 140
Arg Ser Val Val Arg Leu Ala Val Thr Ile Leu Asp Ile Gly Pro Gly
145                 150                 155                 160
Thr Leu Phe Lys Gly Pro Arg Leu Gly Leu Gly Asp Gly Ser Gly Val
                165                 170                 175
Leu Asn Asn Arg Leu Val Gly Leu Ser Val Gly Gln Met His Val Thr
            180                 185                 190
Lys Leu Ala Glu Pro Leu Glu Ile Val Phe Ser His Gln Arg Pro Pro
        195                 200                 205
Pro Asn Met Thr Leu Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr
    210                 215                 220
Thr Gly Asp Trp Ser Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu
225                 230                 235                 240
Gly Thr Val Cys Cys Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu
                245                 250                 255
Arg Pro Thr Leu Asp Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser
            260                 265                 270
Gln Ala Gly Cys Gly Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile
        275                 280                 285
Leu Tyr Ala Phe Leu Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp
    290                 295                 300
Ala Pro Lys Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn
305                 310                 315                 320
Leu Ala Phe Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala
                325                 330                 335
Ala Cys Trp Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala
            340                 345                 350
Phe Thr Trp Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val
        355                 360                 365
Arg Val Phe Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu
    370                 375                 380
Val Gly Trp Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala
385                 390                 395                 400
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Asn Ser Tyr Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser
                405                 410                 415
Leu Glu Leu Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr
            420                 425                 430
Ile Thr Val His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val
        435                 440                 445
Val Leu Ala Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr
    450                 455                 460
Ala Val Lys Glu Arg Gly Lys Asn Arg Lys Lys Val Leu Thr Leu Leu
465                 470                 475                 480
Gly Leu Ser Ser Leu Ala Ser Trp Val Ser Ile Val His Leu Trp Ser
                485                 490                 495
Asn Gln Leu Arg Pro Glu Gly Gln Asn His Val Ile
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<210> 5
<211> 897
<212> DNA
<213> Homo sapiens

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tttttcgccc tgctcctgag acccaccttg gaccagtcca cggtgcatat cctcacacgc     180
atctcccagg cgggctgtgg ggtctccatg atcttcctgg ccttcaccat tattctttat     240
gcctttctga ggctttcccg ggagaggttc aagtcagaag atgccccaaa gatccacgtg     300
gccctgggtg gcagcctgtt cctcctgaat ctggccttct tggtcaatgt ggggagtggc     360
tcaaaggggt ctgatgctgc ctgctgggcc cgggggctg tcttccacta cttcctgctc      420
tgtgccttca cctggatggg ccttgaagcc ttccacctct acctgctcgc tgtcagggtc     480
ttcaacacct acttcgggca ctacttcctg aagctgagcc tggtgggctg gggcctgccc     540
gccctgatgg tcatcggcac tgggagtgcc aacagctacg gcctctacac catccgtgat     600
agggagaacc gcacctctct ggagctatgc tggttccgtg aagggacaac catgtacgcc     660
ctctatatca ccgtccacgg ctacttcctc atcaccttcc tctttggcat ggtggtcctg     720
gccctggtgg tctggaagat cttcaccctg tcccgtgcta cagcggtcaa ggagcggggg     780
aagaaccgga agaaggtgct cacctgctg ggcctctcga gccttgcaag ttgggtgtcc      840
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<210> 6
<211> 298
<212> PRT
<213> Homo sapiens

<400> 6

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            20                  25                  30
Val Cys Cys Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu Arg Pro
        35                  40                  45
Thr Leu Asp Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser Gln Ala
    50                  55                  60
Gly Cys Gly Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile Leu Tyr
65                  70                  75                  80
Ala Phe Leu Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro
                85                  90                  95
Lys Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala
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            100                 105                 110
Phe Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys
        115                 120                 125
Trp Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr
    130                 135                 140
Trp Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val
145                 150                 155                 160
Phe Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly
                165                 170                 175
Trp Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser
            180                 185                 190
Tyr Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu
        195                 200                 205
Leu Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr
    210                 215                 220
Val His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu
225                 230                 235                 240
Ala Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val
                245                 250                 255
Lys Glu Arg Gly Lys Asn Arg Lys Lys Val Leu Thr Leu Leu Gly Leu
            260                 265                 270
Ser Ser Leu Ala Ser Trp Val Ser Ile Val His Leu Trp Ser Asn Gln
        275                 280                 285
Leu Arg Pro Glu Gly Gln Asn His Val Ile
    290                 295
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<210> 7
<211> 1080
<212> DNA
<213> Homo sapiens

<400> 7

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catgtcacca agctggctga gcctctggag atcgtcttct ctcaccagcg accgccccct     180
aacatgaccc tcacctgtgt attctgggat gtgactaaag ggaccactgg agactggtct     240
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acccttttcg ccctgctcct gagacccacc ttggaccagt ccacggtgca tatcctcaca     360
cgcatctccc aggcgggctg tggggtctcc atgatcttcc tggctttcac cattattctt     420
tatgcctttc tgaggctttc ccgggagagg ttcaagtcag aagatgcccc aaagatccac     480
gtggccctgg gtggcagcct gttcctcctg aatctggcct tcttggtcaa tgtggggagt     540
ggctcaaagg ggtctgatgc tgcctgctgg gcccgggggg ctgtcttcca ctacttcctg     600
ctctgtgcct tcacctggat gggccttgaa gccttccacc tctacctgct cgctgtcagg     660
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cccgccctga tggtcatcgg cactgggagt gccaacagct acggcctcta caccatccgt     780
gatagggaga accgcacctc tctggagcta tgctggttcc gtgaagggac aaccatgtac     840
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ctggccctgg tggtctggaa gatcttcacc ctgtcccgtg ctacagcggt caaggagcgg     960
gggaagaacc ggaagaaggt gctcaccctg ctgggcctct cgagccttgc aagtttgggtg   1020
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<210> 8
<211> 359
<212> PRT
<213> Homo sapiens

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            20   25   30
Val Gly Leu Ser Val Gly Gln Met His Val Thr Lys Leu Ala Glu Pro
        35   40   45
Leu Glu Ile Val Phe Ser His Gln Arg Pro Pro Pro Asn Met Thr Leu
    50   55   60
Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr Thr Gly Asp Trp Ser
65   70   75   80
Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu Gly Thr Val Cys Cys
                85   90   95
Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu Arg Pro Thr Leu Asp
            100   105   110
Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser Gln Ala Gly Cys Gly
        115   120   125
Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile Leu Tyr Ala Phe Leu
    130   135   140
Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro Lys Ile His
145   150   155   160
Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala Phe Leu Val
                165   170   175
Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys Trp Ala Arg
            180   185   190
Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr Trp Met Gly
        195   200   205
Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val Phe Asn Thr
    210   215   220
Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly Trp Gly Leu
225   230   235   240
Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser Tyr Gly Leu
                245   250   255
Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu Leu Cys Trp
            260   265   270
Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr Val His Gly
        275   280   285
Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu Ala Leu Val
    290   295   300
Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val Lys Glu Arg
305   310   315   320
Gly Lys Asn Arg Lys Lys Val Leu Thr Leu Leu Gly Leu Ser Ser Leu
                325   330   335
Ala Ser Trp Val Ser Ile Val His Leu Trp Ser Asn Gln Leu Arg Pro
            340   345   350
Glu Gly Gln Asn His Val Ile
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<210> 9
<211> 702
<212> DNA
<213> Homo sapiens

<400> 9
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tcccgggaga ggttcaagtc agaagatgcc ccaaagatcc acgtggccct gggtggcagc   120

ctgttcctcc tgaatctggc cttcttggtc aatgtgggga gtggctcaaa ggggtctgat 180
gctgcctgct gggcccgggg ggctgtcttc cactacttcc tgctctgtgc cttcacctgg 240
atgggccttg aagccttcca cctctacctg ctcgctgtca gggtcttcaa cacctacttc 300
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aagatcttca ccctgtcccg tgctacagcg gtcaaggagc gggggaagaa ccggaagaag 600
gtgctcaccc tgctgggcct ctcgagcctt gcaagttggg tgtccatcgt ccatctctgg 660
tccaatcagc tgcgaccaga agggcagaat catgtgatat ga 702

<210> 10
<211> 233
<212> PRT
<213> Homo sapiens

<400> 10
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            20   25   30
Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala Phe
        35   40   45
Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys Trp
    50   55   60
Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr Trp
65   70   75   80
Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val Phe
                85   90   95
Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly Trp
            100   105   110
Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser Tyr
        115   120   125
Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu Leu
    130   135   140
Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr Val
145   150   155   160
His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu Ala
                165   170   175
Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val Lys
            180   185   190
Glu Arg Gly Lys Asn Arg Lys Lys Val Leu Thr Leu Leu Gly Leu Ser
        195   200   205
Ser Leu Ala Ser Trp Val Ser Ile Val His Leu Trp Ser Asn Gln Leu
    210   215   220
Arg Pro Glu Gly Gln Asn His Val Ile
225   230

<210> 11
<211> 489
<212> DNA
<213> Homo sapiens

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gccaggtggc ggcccctccc acagcgggag agccagggat tgatgggtgg aaatgggaga 120

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ggcaccttca cagacagaaa agctcagcca ggggacttcc tgggtttgct ggccagaggt     180
accactccca gtcccaccac agctgccccc tcctccagat gctggttccg tgaagggaca     240
accatgtacg ccctctatat caccgtccac ggctacttcc tcatcacctt cctctttggc     300
atggtggtcc tggccctggt ggtctggaag atcttcaccc tgtcccgtgc tacagcggtc     360
aaggagcggg ggaagaaccg gaagaaggtg ctcaccctgc tgggcctctc gagccttgca     420
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gtgatatga                                                             489

<210> 12
<211> 162
<212> PRT
<213> Homo sapiens

<400> 12
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            20                  25                  30
Gly Leu Met Gly Gly Asn Gly Arg Gly Thr Phe Thr Asp Arg Lys Ala
        35                  40                  45
Gln Pro Gly Asp Phe Leu Gly Leu Leu Ala Arg Gly Thr Thr Pro Ser
    50                  55                  60
Pro Thr Thr Ala Ala Pro Ser Ser Arg Cys Trp Phe Arg Glu Gly Thr
65                  70                  75                  80
Thr Met Tyr Ala Leu Tyr Ile Thr Val His Gly Tyr Phe Leu Ile Thr
                85                  90                  95
Phe Leu Phe Gly Met Val Val Leu Ala Leu Val Val Trp Lys Ile Phe
            100                 105                 110
Thr Leu Ser Arg Ala Thr Ala Val Lys Glu Arg Gly Lys Asn Arg Lys
        115                 120                 125
Lys Val Leu Thr Leu Leu Gly Leu Ser Ser Leu Ala Ser Trp Val Ser
    130                 135                 140
Ile Val His Leu Trp Ser Asn Gln Leu Arg Pro Glu Gly Gln Asn His
145                 150                 155                 160
Val Ile


<210> 13
<211> 1515
<212> DNA
<213> Homo sapiens

<400> 13
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atcttcaact tgaatgacaa ggctttgtgc ttcaccaagt gcaggcagtc gggcagcgac     180
tcctgcaatg tggaaaactt gcagagatac tggctaaact acgaggccca tctgatgaag     240
gaaggtttga cgcagaaggt gaacacgcct ttcctgaagg ctttggtcca gaacctcagc     300
accaacactg cagaagactt ctatttctct ctggagccct ctcaggttcc gaggcaggtg     360
atgaaggacg aggacaagcc ccctgacaga gtgcgacttc ccaagagcct ttttcgatcc     420
ctgccaggca acaggtctgt ggtccgcttg gccgtcacca ttctggacat tggtccaggg     480
actctcttca agggcccccg gctcggcctg ggagatggca gcggcgtgtt gaacaatcgc     540
ctggtgggtt tgagtgtggg acaaatgcat gtcaccaagc tggctgagcc tctggagatc     600
gtcttctctc accagcgacc gccccctaac atgaccctca cctgtgtatt ctgggatgtg     660
actaaaggga ccactggaga ctggtcttct gagggctgct ccacggaggt cagacctgag     720
gggaccgtgt gctgctgtga ccacctgacc ttttttcgccc tgctcctgag acccaccttg     780
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gaccagtcca cggtgcatat cctcacacgc atctcccagg cgggctgtgg ggtctccatg     840
atcttcctgg ccttcaccat tattctttat gcctttctga ggctttcccg ggagaggttc     900
aagtcagaag atgccccaaa gatccacgtg gccctgggtg gcagcctgtt cctcctgaat     960
ctggccttct tggtcaatgt ggggagtggc tcaaaggggt ctgatgctgc ctgctgggcc    1020
cgggggggctg tcttccacta cttcctgctc tgtgccttca cctggatggg ccttgaagcc    1080
ttccacctct acctgctcgc tgtcagggtc ttcaacacct acttcgggca ctacttcctg    1140
aagctgagcc tggtgggctg gggcctgccc gccctgatgg tcatcggcac tgggagtgcc    1200
aacagctacg gcctctacac catccgtgat agggagaacc gcacctctct ggagctatgc    1260
tggttccgtg aagggacaac catgtacgcc ctctatatca ccgtccacgg ctacttcctc    1320
atcaccttcc tctttggcat ggtggtcctg gccctggtgg tctggaagat cttcaccctg    1380
tcccgtgcta cagcggtcaa ggagcggggg aagaaccggt gctcaccctg ctgggctct     1440
cgagccttgc aagttgggtg tccatcgtcc atctctggtc caatcagctg cgaccagaag    1500
ggcagaatca tgtga                                                     1515
```

<210> 14
<211> 504
<212> PRT
<213> Homo sapiens

<400> 14

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Met Ala Thr Pro Arg Gly Leu Gly Ala Leu Leu Leu Leu Leu Leu Leu
 1               5                  10                  15
Pro Thr Ser Gly Gln Glu Lys Pro Thr Glu Gly Pro Arg Asn Thr Cys
            20                  25                  30
Leu Gly Ser Asn Asn Met Tyr Asp Ile Phe Asn Leu Asn Asp Lys Ala
        35                  40                  45
Leu Cys Phe Thr Lys Cys Arg Gln Ser Gly Ser Asp Ser Cys Asn Val
    50                  55                  60
Glu Asn Leu Gln Arg Tyr Trp Leu Asn Tyr Glu Ala His Leu Met Lys
65                  70                  75                  80
Glu Gly Leu Thr Gln Lys Val Asn Thr Pro Phe Leu Lys Ala Leu Val
                85                  90                  95
Gln Asn Leu Ser Thr Asn Thr Ala Glu Asp Phe Tyr Phe Ser Leu Glu
            100                 105                 110
Pro Ser Gln Val Pro Arg Gln Val Met Lys Asp Glu Asp Lys Pro Pro
        115                 120                 125
Asp Arg Val Arg Leu Pro Lys Ser Leu Phe Arg Ser Leu Pro Gly Asn
    130                 135                 140
Arg Ser Val Val Arg Leu Ala Val Thr Ile Leu Asp Ile Gly Pro Gly
145                 150                 155                 160
Thr Leu Phe Lys Gly Pro Arg Leu Gly Leu Gly Asp Gly Ser Gly Val
                165                 170                 175
Leu Asn Asn Arg Leu Val Gly Leu Ser Val Gly Gln Met His Val Thr
            180                 185                 190
Lys Leu Ala Glu Pro Leu Glu Ile Val Phe Ser His Gln Arg Pro Pro
        195                 200                 205
Pro Asn Met Thr Leu Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr
    210                 215                 220
Thr Gly Asp Trp Ser Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu
225                 230                 235                 240
Gly Thr Val Cys Cys Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu
                245                 250                 255
Arg Pro Thr Leu Asp Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser
            260                 265                 270
Gln Ala Gly Cys Gly Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile
        275                 280                 285
```

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Leu Tyr Ala Phe Leu Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp
    290                 295                 300
Ala Pro Lys Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn
305                 310                 315                 320
Leu Ala Phe Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala
                325                 330                 335
Ala Cys Trp Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala
            340                 345                 350
Phe Thr Trp Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val
        355                 360                 365
Arg Val Phe Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu
    370                 375                 380
Val Gly Trp Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala
385                 390                 395                 400
Asn Ser Tyr Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser
                405                 410                 415
Leu Glu Leu Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr
            420                 425                 430
Ile Thr Val His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val
        435                 440                 445
Val Leu Ala Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr
    450                 455                 460
Ala Val Lys Glu Arg Gly Lys Asn Arg Cys Ser Pro Cys Trp Ala Ser
465                 470                 475                 480
Arg Ala Leu Gln Val Gly Cys Pro Ser Ser Ile Ser Gly Pro Ile Ser
                485                 490                 495
Cys Asp Gln Lys Gly Arg Ile Met
            500
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<210> 15
<211> 885
<212> DNA
<213> Homo sapiens

<400> 15
atgaccctca cctgtgtatt ctgggatgtg actaaaggga ccactggaga ctggtcttct 60
gagggctgct ccacggaggt cagacctgag gggaccgtgt gctgctgtga ccacctgacc 120
tttttcgccc tgctcctgag acccaccttg gaccagtcca cggtgcatat cctcacacgc 180
atctcccagg cgggctgtgg ggtctccatg atcttcctgg ccttcaccat tattctttat 240
gcctttctga ggctttcccg ggagaggttc aagtcagaag atgccccaaa gatccacgtg 300
gccctgggtg gcagcctgtt cctcctgaat ctggccttct tggtcaatgt ggggagtggc 360
tcaaaggggt ctgatgctgc ctgctgggcc cgggggggctg tcttccacta cttcctgctc 420
tgtgccttca cctggatggg ccttgaagcc ttccacctct acctgctcgc tgtcagggtc 480
ttcaacacct acttcgggca ctacttcctg aagctgagcc tggtgggctg gggcctgccc 540
gccctgatgg tcatcggcac tgggagtgcc aacagctacg gcctctacac catccgtgat 600
agggagaacc gcacctctct ggagctatgc tggttccgtg aagggacaac catgtacgcc 660
ctctatatca ccgtccacgg ctacttcctc atcaccttcc tctttggcat ggtggtcctg 720
gccctggtgg tctggaagat cttcaccctg tcccgtgcta cagcggtcaa ggagcggggg 780
aagaaccggt gctcaccctg ctgggcctct cgagccttgc aagttgggtg tccatcgtcc 840
atctctggtc caatcagctg cgaccagaag ggcagaatca tgtga 885

<210> 16
<211> 294
<212> PRT
<213> Homo sapiens

<400> 16
Met Thr Leu Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr Thr Gly
1 5 10 15
Asp Trp Ser Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu Gly Thr
20 25 30
Val Cys Cys Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu Arg Pro
35 40 45
Thr Leu Asp Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser Gln Ala
50 55 60
Gly Cys Gly Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile Leu Tyr
65 70 75 80
Ala Phe Leu Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro
85 90 95
Lys Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala
100 105 110
Phe Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys
115 120 125
Trp Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr
130 135 140
Trp Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val
145 150 155 160
Phe Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly
165 170 175
Trp Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser
180 185 190
Tyr Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu
195 200 205
Leu Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr
210 215 220
Val His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu
225 230 235 240
Ala Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val
245 250 255
Lys Glu Arg Gly Lys Asn Arg Cys Ser Pro Cys Trp Ala Ser Arg Ala
260 265 270
Leu Gln Val Gly Cys Pro Ser Ser Ile Ser Gly Pro Ile Ser Cys Asp
275 280 285
Gln Lys Gly Arg Ile Met
290

<210> 17
<211> 1068
<212> DNA
<213> Homo sapiens

<400> 17
atggcccctt ctgcagcctg gcctccccga tctccccttt cacagggccc ccggctcggc 60
ctgggagatg gcagcgggcgt gttgaacaat cgcctggtgg gtttgagtgt gggacaaatg 120
catgtcacca agctggctga gcctctggag atcgtcttct ctcaccagcg accgcccccct 180
aacatgaccc tcacctgtgt attctgggat gtgactaaag ggaccactgg agactggtct 240
tctgagggct gctccacgga ggtcagacct gaggggaccg tgtgctgctg tgaccacctg 300
acctttttcg ccctgctcct gagacccacc ttggaccagt ccacggtgca tatcctcaca 360
cgcatctccc aggcgggctg tggggtctcc atgatcttcc tggccttcac cattattctt 420
tatgcctttc tgaggctttc ccgggagagg ttcaagtcag aagatgcccc aaagatccac 480
gtggccctgg gtggcagcct gttcctcctg aatctggcct tcttggtcaa tgtggggagt 540
ggctcaaagg ggtctgatgc tgcctgctgg gcccgggggg ctgtcttcca ctacttcctg 600

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ctctgtgcct tcacctggat gggccttgaa gccttccacc tctacctgct cgctgtcagg      660
gtcttcaaca cctacttcgg gcactacttc ctgaagctga gcctggtggg ctggggcctg      720
cccgccctga tggtcatcgg cactgggagt gccaacagct acggcctcta caccatccgt      780
gatagggaga accgcacctc tctggagcta tgctggttcc gtgaagggac aaccatgtac      840
gccctctata tcaccgtcca cggctacttc ctcatcacct tcctctttgg catggtggtc      900
ctggccctgg tggtctggaa gatcttcacc ctgtcccgtg ctacagcggt caaggagcgg      960
gggaagaacc ggtgctcacc ctgctgggcc tctcgagcct tgcaagttgg gtgtccatcg     1020
tccatctctg gtccaatcag ctgcgaccag aagggcagaa tcatgtga                  1068

<210> 18
<211> 355
<212> PRT
<213> Homo sapiens

<400> 18
Met Ala Pro Ser Ala Ala Trp Pro Pro Arg Ser Pro Leu Ser Gln Gly
 1               5                  10                  15
Pro Arg Leu Gly Leu Gly Asp Gly Ser Gly Val Leu Asn Asn Arg Leu
            20                  25                  30
Val Gly Leu Ser Val Gly Gln Met His Val Thr Lys Leu Ala Glu Pro
        35                  40                  45
Leu Glu Ile Val Phe Ser His Gln Arg Pro Pro Pro Asn Met Thr Leu
    50                  55                  60
Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr Thr Gly Asp Trp Ser
65                  70                  75                  80
Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu Gly Thr Val Cys Cys
                85                  90                  95
Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu Arg Pro Thr Leu Asp
            100                 105                 110
Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser Gln Ala Gly Cys Gly
        115                 120                 125
Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile Leu Tyr Ala Phe Leu
    130                 135                 140
Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro Lys Ile His
145                 150                 155                 160
Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala Phe Leu Val
                165                 170                 175
Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys Trp Ala Arg
            180                 185                 190
Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr Trp Met Gly
        195                 200                 205
Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val Phe Asn Thr
    210                 215                 220
Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly Trp Gly Leu
225                 230                 235                 240
Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser Tyr Gly Leu
                245                 250                 255
Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu Leu Cys Trp
            260                 265                 270
Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr Val His Gly
        275                 280                 285
Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu Ala Leu Val
    290                 295                 300
Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val Lys Glu Arg
305                 310                 315                 320
Gly Lys Asn Arg Cys Ser Pro Cys Trp Ala Ser Arg Ala Leu Gln Val
```

```
                325                 330                 335
Gly Cys Pro Ser Ser Ile Ser Gly Pro Ile Ser Cys Asp Gln Lys Gly
            340                 345                 350
Arg Ile Met
        355
```

<210> 19
<211> 690
<212> DNA
<213> Homo sapiens

<400> 19

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atgggagctc cccatgggag ctgtggcccc ttggggcctc ttatttctca ccccaggctt      60
tcccgggaga ggttcaagtc agaagatgcc ccaaagatcc acgtggccct gggtggcagc     120
ctgttcctcc tgaatctggc cttcttggtc aatgtgggga gtggctcaaa ggggtctgat     180
gctgcctgct gggcccgggg ggctgtcttc cactacttcc tgctctgtgc cttcacctgg     240
atgggccttg aagccttcca cctctacctg ctcgctgtca gggtcttcaa cacctacttc     300
gggcactact tcctgaagct gagcctggtg ggctggggcc tgcccgccct gatggtcatc     360
ggcactggga gtgccaacag ctacggcctc tacaccatcc gtgataggga gaaccgcacc     420
tctctggagc tatgctggtt ccgtgaaggg acaaccatgt acgccctcta tatcaccgtc     480
cacggctact tcctcatcac cttcctcttt ggcatggtgg tcctggccct ggtggtctgg     540
aagatcttca ccctgtcccg tgctacagcg gtcaaggagc gggggaagaa ccggtgctca     600
ccctgctggg cctctcgagc cttgcaagtt gggtgtccat cgtccatctc tggtccaatc     660
agctgcgacc agaagggcag aatcatgtga                                      690
```

<210> 20
<211> 229
<212> PRT
<213> Homo sapiens

<400> 20

```
Met Gly Ala Pro His Gly Ser Cys Gly Pro Leu Gly Pro Leu Ile Ser
 1               5                  10                  15
His Pro Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro Lys
            20                  25                  30
Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala Phe
        35                  40                  45
Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys Trp
    50                  55                  60
Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr Trp
65                  70                  75                  80
Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val Phe
                85                  90                  95
Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly Trp
            100                 105                 110
Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser Tyr
        115                 120                 125
Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu Leu
    130                 135                 140
Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr Val
145                 150                 155                 160
His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu Ala
                165                 170                 175
Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val Lys
            180                 185                 190
Glu Arg Gly Lys Asn Arg Cys Ser Pro Cys Trp Ala Ser Arg Ala Leu
```

```
        195                 200                 205
Gln Val Gly Cys Pro Ser Ser Ile Ser Gly Pro Ile Ser Cys Asp Gln
    210                 215                 220
Lys Gly Arg Ile Met
225
```

<210> 21
<211> 477
<212> DNA
<213> Homo sapiens

<400> 21
atggggcaaa tgaaacatgt ctttgaggtc actttggcat taaagagaca ccagactgga 60
gccaggtggc ggcccctccc acagcgggag agccagggat tgatgggtgg aaatgggaga 120
ggcaccttca cagacagaaa agctcagcca ggggacttcc tgggtttgct ggccagaggt 180
accactccca gtcccaccac agctgccccc tcctccagat gctggttccg tgaagggaca 240
accatgtacg ccctctatat caccgtccac ggctacttcc tcatcacctt cctctttggc 300
atggtggtcc tggccctggt ggtctggaag atcttcaccc tgtcccgtgc tacagcggtc 360
aaggagcggg ggaagaaccg gtgctcaccc tgctgggcct ctcgagcctt gcaagttggg 420
tgtccatcgt ccatctctgg tccaatcagc tgcgaccaga agggcagaat catgtga 477

<210> 22
<211> 158
<212> PRT
<213> Homo sapiens

<400> 22
Met Gly Gln Met Lys His Val Phe Glu Val Thr Leu Ala Leu Lys Arg
 1   5   10   15
His Gln Thr Gly Ala Arg Trp Arg Pro Leu Pro Gln Arg Glu Ser Gln
            20   25   30
Gly Leu Met Gly Gly Asn Gly Arg Gly Thr Phe Thr Asp Arg Lys Ala
        35   40   45
Gln Pro Gly Asp Phe Leu Gly Leu Leu Ala Arg Gly Thr Thr Pro Ser
    50   55   60
Pro Thr Thr Ala Ala Pro Ser Ser Arg Cys Trp Phe Arg Glu Gly Thr
65   70   75   80
Thr Met Tyr Ala Leu Tyr Ile Thr Val His Gly Tyr Phe Leu Ile Thr
                85   90   95
Phe Leu Phe Gly Met Val Val Leu Ala Leu Val Val Trp Lys Ile Phe
            100   105   110
Thr Leu Ser Arg Ala Thr Ala Val Lys Glu Arg Gly Lys Asn Arg Cys
        115   120   125
Ser Pro Cys Trp Ala Ser Arg Ala Leu Gln Val Gly Cys Pro Ser Ser
    130   135   140
Ile Ser Gly Pro Ile Ser Cys Asp Gln Lys Gly Arg Ile Met
145   150   155

<210> 23
<211> 1566
<212> DNA
<213> Homo sapiens

<400> 23
atggcgacgc ccaggggcct gggggccctg ctcctgctcc tcctgctccc gacctcaggt 60
caggaaaagc ccaccgaagg gccaagaaac acctgcctgg ggagcaacaa catgtacgac 120

```
atcttcaact tgaatgacaa ggctttgtgc ttcaccaagt gcaggcagtc gggcagcgac     180
tcctgcaatg tggaaaactt gcagagatac tggctaaact acgaggccca tctgatgaag     240
gaaggtttga cgcagaaggt gaacacgcct ttcctgaagg ctttggtcca gaacctcagc     300
accaacactg cagaagactt ctatttctct ctggagccct ctcaggttcc gaggcaggtg     360
atgaaggacg aggacaagcc ccctgacaga gtgcgacttc ccaagagcct ttttcgatcc     420
ctgccaggca acaggtctgt ggtccgcttg gccgtcacca ttctggacat tggtccaggg     480
actctcttca agggcccccg gctcggcctg ggagatggca gcggcgtgtt gaacaatcgc     540
ctggtgggtt tgagtgtggg acaaatgcat gtcaccaagc tggctgagcc tctggagatc     600
gtcttctctc accagcgacc gccccctaac atgaccctca cctgtgtatt ctgggatgtg     660
actaaaggga ccactggaga ctggtcttct gagggctgct ccacggaggt cagacctgag     720
gggaccgtgt gctgctgtga ccacctgacc ttttccgccc tgctcctgag acccaccttg     780
gaccagtcca cggtgcatat cctcacacgc atctcccagg cgggctgtgg ggtctccatg     840
atcttcctgg ccttcaccat tattctttat gcctttctga ggctttcccg ggagaggttc     900
aagtcagaag atgccccaaa gatccacgtg gccctgggtg gcagcctgtt cctcctgaat     960
ctggccttct tggtcaatgt ggggagtggc tcaaaggggt ctgatgctgc ctgctgggcc    1020
cgggggctg tcttccacta cttcctgctc tgtgccttca cctggatggg ccttgaagcc    1080
ttccacctct acctgctcgc tgtcagggtc ttcaacacct acttcgggca ctacttcctg    1140
aagctgagcc tggtgggctg gggcctgccc gccctgatgg tcatcggcac tgggagtgcc    1200
aacagctacg gcctctacac catccgtgat agggagaacc gcacctctct ggagctatgc    1260
tggttccgtg aagggacaac catgtacgcc ctctatatca ccgtccacgg ctacttcctc    1320
atcacctcc tctttggcat ggtggtcctg gccctggtgg tctggaagat cttcaccctg    1380
tcccgtgcta cagcggtcaa ggagcggggg aagaaccgga agaaggtgct caccctgctg    1440
ggcctctcga gcctggtggg tgtgacatgg gggttggcca tcttcacccc gttgggcctc    1500
tccacgtct acatctttgc actttcaac tccttgcaag gtgaggcccc tgcaccaggg     1560
aggtga                                                              1566
```

<210> 24
<211> 521
<212> PRT
<213> Homo sapiens

<400> 24

```
Met Ala Thr Pro Arg Gly Leu Gly Ala Leu Leu Leu Leu Leu Leu Leu
 1               5                  10                  15
Pro Thr Ser Gly Gln Glu Lys Pro Thr Glu Gly Pro Arg Asn Thr Cys
            20                  25                  30
Leu Gly Ser Asn Asn Met Tyr Asp Ile Phe Asn Leu Asn Asp Lys Ala
        35                  40                  45
Leu Cys Phe Thr Lys Cys Arg Gln Ser Gly Ser Asp Ser Cys Asn Val
    50                  55                  60
Glu Asn Leu Gln Arg Tyr Trp Leu Asn Tyr Glu Ala His Leu Met Lys
65                  70                  75                  80
Glu Gly Leu Thr Gln Lys Val Asn Thr Pro Phe Leu Lys Ala Leu Val
                85                  90                  95
Gln Asn Leu Ser Thr Asn Thr Ala Glu Asp Phe Tyr Phe Ser Leu Glu
            100                 105                 110
Pro Ser Gln Val Pro Arg Gln Val Met Lys Asp Glu Asp Lys Pro Pro
        115                 120                 125
Asp Arg Val Arg Leu Pro Lys Ser Leu Phe Arg Ser Leu Pro Gly Asn
    130                 135                 140
Arg Ser Val Val Arg Leu Ala Val Thr Ile Leu Asp Ile Gly Pro Gly
145                 150                 155                 160
Thr Leu Phe Lys Gly Pro Arg Leu Gly Leu Gly Asp Gly Ser Gly Val
                165                 170                 175
Leu Asn Asn Arg Leu Val Gly Leu Ser Val Gly Gln Met His Val Thr
            180                 185                 190
```

Lys Leu Ala Glu Pro Leu Glu Ile Val Phe Ser His Gln Arg Pro Pro
195 200 205
Pro Asn Met Thr Leu Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr
210 215 220
Thr Gly Asp Trp Ser Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu
225 230 235 240
Gly Thr Val Cys Cys Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu
245 250 255
Arg Pro Thr Leu Asp Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser
260 265 270
Gln Ala Gly Cys Gly Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile
275 280 285
Leu Tyr Ala Phe Leu Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp
290 295 300
Ala Pro Lys Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn
305 310 315 320
Leu Ala Phe Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala
325 330 335
Ala Cys Trp Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala
340 345 350
Phe Thr Trp Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val
355 360 365
Arg Val Phe Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu
370 375 380
Val Gly Trp Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala
385 390 395 400
Asn Ser Tyr Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser
405 410 415
Leu Glu Leu Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr
420 425 430
Ile Thr Val His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val
435 440 445
Val Leu Ala Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr
450 455 460
Ala Val Lys Glu Arg Gly Lys Asn Arg Lys Lys Val Leu Thr Leu Leu
465 470 475 480
Gly Leu Ser Ser Leu Val Gly Val Thr Trp Gly Leu Ala Ile Phe Thr
485 490 495
Pro Leu Gly Leu Ser Thr Val Tyr Ile Phe Ala Leu Phe Asn Ser Leu
500 505 510
Gln Gly Glu Ala Pro Ala Pro Gly Arg
515 520

<210> 25
<211> 936
<212> DNA
<213> Homo sapiens

<400> 25
atgaccctca cctgtgtatt ctgggatgtg actaaaggga ccactggaga ctggtcttct 60
gagggctgct ccacggaggt cagacctgag gggaccgtgt gctgctgtga ccacctgacc 120
tttttcgccc tgctcctgag acccaccttg gaccagtcca cggtgcatat cctcacacgc 180
atctcccagg cgggctgtgg ggtctccatg atcttcctgg ccttcaccat tattctttat 240
gcctttctga ggctttcccg ggagaggttc aagtcagaag atgccccaaa gatccacgtg 300
gccctgggtg gcagcctgtt cctcctgaat ctggccttct tggtcaatgt ggggagtggc 360
tcaaaggggt ctgatgctgc ctgctgggcc cgggggggctg tcttccacta cttcctgctc 420

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tgtgccttca cctggatggg ccttgaagcc ttccacctct acctgctcgc tgtcagggtc      480
ttcaacacct acttcgggca ctacttcctg aagctgagcc tggtgggctg gggcctgccc      540
gccctgatgg tcatcggcac tgggagtgcc aacagctacg gcctctacac catccgtgat      600
agggagaacc gcacctctct ggagctatgc tggttccgtg aagggacaac catgtacgcc      660
ctctatatca ccgtccacgg ctacttcctc atcaccttcc tctttggcat ggtggtcctg      720
gccctggtgg tctggaagat cttcaccctg tcccgtgcta cagcggtcaa ggagcggggg      780
aagaaccgga agaaggtgct cacctgctg ggcctctcga gcctggtggg tgtgacatgg      840
gggttggcca tcttcacccc gttgggcctc tccaccgtct acatctttgc acttttcaac      900
tccttgcaag gtgaggcccc tgcaccaggg aggtga                                936

<210> 26
<211> 311
<212> PRT
<213> Homo sapiens

<400> 26
Met Thr Leu Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr Thr Gly
 1               5                  10                  15
Asp Trp Ser Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu Gly Thr
            20                  25                  30
Val Cys Cys Cys Asp His Leu Thr Phe Phe Ala Leu Leu Arg Pro
        35                  40                  45
Thr Leu Asp Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser Gln Ala
    50                  55                  60
Gly Cys Gly Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile Leu Tyr
65                  70                  75                  80
Ala Phe Leu Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro
                85                  90                  95
Lys Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala
            100                 105                 110
Phe Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys
        115                 120                 125
Trp Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr
    130                 135                 140
Trp Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val
145                 150                 155                 160
Phe Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly
                165                 170                 175
Trp Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser
            180                 185                 190
Tyr Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu
        195                 200                 205
Leu Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr
    210                 215                 220
Val His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu
225                 230                 235                 240
Ala Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val
                245                 250                 255
Lys Glu Arg Gly Lys Asn Arg Lys Lys Val Leu Thr Leu Leu Gly Leu
            260                 265                 270
Ser Ser Leu Val Gly Val Thr Trp Gly Leu Ala Ile Phe Thr Pro Leu
        275                 280                 285
Gly Leu Ser Thr Val Tyr Ile Phe Ala Leu Phe Asn Ser Leu Gln Gly
    290                 295                 300
Glu Ala Pro Ala Pro Gly Arg
305                 310
```

```
<210> 27
<211> 1119
<212> DNA
<213> Homo sapiens

<400> 27
atggcccctt ctgcagcctg gcctccccga tctccccttt cacagggccc ccggctcggc      60
ctgggagatg gcagcggcgt gttgaacaat cgcctggtgg gtttgagtgt gggacaaatg     120
catgtcacca agctggctga gcctctggag atcgtcttct ctcaccagcg accgccccct     180
aacatgaccc tcacctgtgt attctgggat gtgactaaag ggaccactgg agactggtct     240
tctgagggct gctccacgga ggtcagacct gagggggaccg tgtgctgctg tgaccacctg     300
acctttttcg ccctgctcct gagacccacc ttggaccagt ccacggtgca tatcctcaca     360
cgcatctccc aggcgggctg tggggtctcc atgatcttcc tggccttcac cattattctt     420
tatgcctttc tgaggctttc ccgggagagg ttcaagtcag aagatgcccc aaagatccac     480
gtggccctgg gtggcagcct gttcctcctg aatctggcct tcttggtcaa tgtggggagt     540
ggctcaaagg ggtctgatgc tgcctgctgg gcccgggggg ctgtcttcca ctacttcctg     600
ctctgtgcct tcacctggat gggccttgaa gccttccacc tctacctgct cgctgtcagg     660
gtcttcaaca cctacttcgg gcactacttc ctgaagctga gcctggtggg ctggggcctg     720
cccgccctga tggtcatcgg cactgggagt gccaacagct acggcctcta caccatccgt     780
gatagggaga accgcacctc tctggagcta tgctggttcc gtgaagggac aaccatgtac     840
gccctctata tcaccgtcca cggctacttc ctcatcacct tcctctttgg catggtggtc     900
ctggccctgg tggtctggaa gatcttcacc ctgtcccgtg ctacagcggt caaggagcgg     960
gggaagaacc ggaagaaggt gctcaccctg ctgggcctct cgagcctggt gggtgtgaca    1020
tgggggttgg ccatcttcac cccgttgggc ctctccaccg tctacatctt tgcacttttc    1080
aactccttgc aaggtgaggc ccctgcacca gggaggtga                          1119

<210> 28
<211> 372
<212> PRT
<213> Homo sapiens

<400> 28
Met Ala Pro Ser Ala Ala Trp Pro Pro Arg Ser Pro Leu Ser Gln Gly
 1               5                  10                  15
Pro Arg Leu Gly Leu Gly Asp Gly Ser Gly Val Leu Asn Asn Arg Leu
            20                  25                  30
Val Gly Leu Ser Val Gly Gln Met His Val Thr Lys Leu Ala Glu Pro
        35                  40                  45
Leu Glu Ile Val Phe Ser His Gln Arg Pro Pro Pro Asn Met Thr Leu
    50                  55                  60
Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr Thr Gly Asp Trp Ser
65                  70                  75                  80
Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu Gly Thr Val Cys Cys
                85                  90                  95
Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu Arg Pro Thr Leu Asp
            100                 105                 110
Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser Gln Ala Gly Cys Gly
        115                 120                 125
Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile Leu Tyr Ala Phe Leu
    130                 135                 140
Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro Lys Ile His
145                 150                 155                 160
Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala Phe Leu Val
                165                 170                 175
Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys Trp Ala Arg
            180                 185                 190
```

```
Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr Trp Met Gly
        195                 200                 205
Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val Phe Asn Thr
    210                 215                 220
Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly Trp Gly Leu
225                 230                 235                 240
Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser Tyr Gly Leu
                245                 250                 255
Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu Leu Cys Trp
            260                 265                 270
Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr Val His Gly
        275                 280                 285
Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu Ala Leu Val
    290                 295                 300
Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val Lys Glu Arg
305                 310                 315                 320
Gly Lys Asn Arg Lys Lys Val Leu Thr Leu Leu Gly Leu Ser Ser Leu
                325                 330                 335
Val Gly Val Thr Trp Gly Leu Ala Ile Phe Thr Pro Leu Gly Leu Ser
            340                 345                 350
Thr Val Tyr Ile Phe Ala Leu Phe Asn Ser Leu Gln Gly Glu Ala Pro
        355                 360                 365
Ala Pro Gly Arg
    370
```

<210> 29
<211> 741
<212> DNA
<213> Homo sapiens

<400> 29

```
atgggagctc cccatgggag ctgtggcccc ttggggcctc ttatttctca ccccaggctt      60
tcccgggaga ggttcaagtc agaagatgcc ccaaagatcc acgtggccct gggtggcagc     120
ctgttcctcc tgaatctggc cttcttggtc aatgtgggga gtggctcaaa ggggtctgat     180
gctgcctgct gggcccgggg ggctgtcttc cactacttcc tgctctgtgc cttcacctgg     240
atgggccttg aagccttcca cctctacctg ctcgctgtca gggtcttcaa cacctacttc     300
gggcactact tcctgaagct gagcctggtg ggctggggcc tgcccgccct gatggtcatc     360
ggcactggga gtgccaacag ctacggcctc tacaccatcc gtgataggga gaaccgcacc     420
tctctggagc tatgctggtt ccgtgaaggg acaaccatgt acgccctcta tatcaccgtc     480
cacggctact tcctcatcac cttcctcttt ggcatggtgg tcctggccct ggtggtctgg     540
aagatcttca ccctgtcccg tgctacagcg gtcaaggagc gggggaagaa ccggaagaag     600
gtgctcaccc tgctgggcct ctcgagcctg gtgggtgtga catgggggtt ggccatcttc     660
accccgttgg gctctccac cgtctacatc tttgcacttt tcaactcctt gcaaggtgag     720
gcccctgcac cagggaggtg a                                               741
```

<210> 30
<211> 246
<212> PRT
<213> Homo sapiens

<400> 30

```
Met Gly Ala Pro His Gly Ser Cys Gly Pro Leu Gly Pro Leu Ile Ser
 1               5                  10                  15
His Pro Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro Lys
            20                  25                  30
Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala Phe
```

```
        35                  40                  45
Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys Trp
    50                  55                  60
Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr Trp
65                  70                  75                  80
Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val Phe
                85                  90                  95
Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly Trp
            100                 105                 110
Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser Tyr
        115                 120                 125
Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu Leu
    130                 135                 140
Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr Val
145                 150                 155                 160
His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu Ala
                165                 170                 175
Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val Lys
            180                 185                 190
Glu Arg Gly Lys Asn Arg Lys Lys Val Leu Thr Leu Leu Gly Leu Ser
        195                 200                 205
Ser Leu Val Gly Val Thr Trp Gly Leu Ala Ile Phe Thr Pro Leu Gly
    210                 215                 220
Leu Ser Thr Val Tyr Ile Phe Ala Leu Phe Asn Ser Leu Gln Gly Glu
225                 230                 235                 240
Ala Pro Ala Pro Gly Arg
                245
```

<210> 31
<211> 528
<212> DNA
<213> Homo sapiens

<400> 31

```
atggggcaaa tgaaacatgt ctttgaggtc actttggcat taaagagaca ccagactgga      60
gccaggtggc ggcccctccc acagcgggag agccagggat tgatgggtgg aaatgggaga     120
ggcaccttca cagacagaaa agctcagcca ggggacttcc tgggtttgct ggccagaggt     180
accactccca gtcccaccac agctgccccc tcctccagat gctggttccg tgaagggaca     240
accatgtacg ccctctatat caccgtccac ggctacttcc tcatcacctt cctctttggc     300
atggtggtcc tggccctggt ggtctggaag atcttcaccc tgtcccgtgc tacagcggtc     360
aaggagcggg ggaagaaccg gaagaaggtg ctcaccctgc tgggcctctc gagcctggtg     420
ggtgtgacat gggggttggc catcttcacc ccgttgggcc tctccaccgt ctacatcttt     480
gcacttttca actccttgca aggtgaggcc cctgcaccag ggaggtga                  528
```

<210> 32
<211> 175
<212> PRT
<213> Homo sapiens

<400> 32

```
Met Gly Gln Met Lys His Val Phe Glu Val Thr Leu Ala Leu Lys Arg
 1               5                  10                  15
His Gln Thr Gly Ala Arg Trp Arg Pro Leu Pro Gln Arg Glu Ser Gln
            20                  25                  30
Gly Leu Met Gly Gly Asn Gly Arg Gly Thr Phe Thr Asp Arg Lys Ala
        35                  40                  45
```

```
Gln Pro Gly Asp Phe Leu Gly Leu Leu Ala Arg Gly Thr Thr Pro Ser
    50                  55                  60
Pro Thr Thr Ala Ala Pro Ser Ser Arg Cys Trp Phe Arg Glu Gly Thr
65                  70                  75                  80
Thr Met Tyr Ala Leu Tyr Ile Thr Val His Gly Tyr Phe Leu Ile Thr
                85                  90                  95
Phe Leu Phe Gly Met Val Val Leu Ala Leu Val Val Trp Lys Ile Phe
            100                 105                 110
Thr Leu Ser Arg Ala Thr Ala Val Lys Glu Arg Gly Lys Asn Arg Lys
        115                 120                 125
Lys Val Leu Thr Leu Leu Gly Leu Ser Ser Leu Val Gly Val Thr Trp
    130                 135                 140
Gly Leu Ala Ile Phe Thr Pro Leu Gly Leu Ser Thr Val Tyr Ile Phe
145                 150                 155                 160
Ala Leu Phe Asn Ser Leu Gln Gly Glu Ala Pro Ala Pro Gly Arg
                165                 170                 175
```

<210> 33
<211> 1458
<212> DNA
<213> Homo sapiens

<400> 33

```
atggcgacgc ccaggggcct gggggccctg ctcctgctcc tcctgctccc gacctcaggt      60
caggaaaagc ccaccgaagg gccaagaaac acctgcctgg ggagcaacaa catgtacgac     120
atcttcaact tgaatgacaa ggctttgtgc ttcaccaagt gcaggcagtc gggcagcgac     180
tcctgcaatg tggaaaactt gcagagatac tggctaaact acgaggccca tctgatgaag     240
gaaggtttga cgcagaaggt gaacacgcct ttcctgaagg ctttggtcca gaacctcagc     300
accaacactg cagaagactt ctatttctct ctggagccct ctcaggttcc gaggcaggtg     360
atgaaggacg aggacaagcc ccctgacaga gtgcgacttc ccaagagcct ttttcgatcc     420
ctgccaggca acaggtctgt ggtccgcttg gccgtcacca ttctggacat tggtccaggg     480
actctcttca agggcccccg gctcggcctg ggagatggca gcggcgtgtt gaacaatcgc     540
ctggtgggtt tgagtgtggg acaaatgcat gtcaccaagc tggctgagcc tctggagatc     600
gtctttctc accagcgacc gccccctaac atgaccctca cctgtgtatt ctgggatgtg     660
actaaaggga ccactggaga ctggtcttct gagggctgct ccacggaggt cagacctgag     720
gggaccgtgt gctgctgtga ccacctgacc tttttcgccc tgctcctgag acccaccttg     780
gaccagtcca cggtgcatat cctcacacgc atctcccagg cgggctgtgg ggtctccatg     840
atcttcctgg ccttcaccat tattctttat gcctttctga ggctttcccg ggagaggttc     900
aagtcagaag atgccccaaa gatccacgtg gccctgggtg gcagcctgtt cctcctgaat     960
ctggccttct tggtcaatgt ggggagtggc tcaaaggggt ctgatgctgc ctgctgggcc    1020
cgggggctg tcttccacta cttcctgctc tgtgccttca cctggatggg ccttgaagcc    1080
ttccacctct acctgctcgc tgtcagggtc ttcaacacct acttcgggca ctacttcctg    1140
aagctgagcc tggtgggctg gggcctgccc gccctgatgg tcatcggcac tgggagtgcc    1200
aacagctacg gcctctacac catccgtgat agggagaacc gcacctctct ggagctatgc    1260
tggttccgtg aagggacaac catgtacgcc ctctatatca ccgtccacgg ctacttcctc    1320
atcaccttcc tctttggcat ggtggtcctg gccctggtgg tctggaagat cttcaccctg    1380
tcccgtgcta cagcggtcaa ggagcggggg aagaaccggt gctcaccctg ctgggcctct    1440
cgagcctggt gggtgtga                                                  1458
```

<210> 34
<211> 485
<212> PRT
<213> Homo sapiens

<400> 34

```
Met Ala Thr Pro Arg Gly Leu Gly Ala Leu Leu Leu Leu Leu Leu Leu
```

```
 1               5                  10                  15
Pro Thr Ser Gly Gln Glu Lys Pro Thr Glu Gly Pro Arg Asn Thr Cys
            20                  25                  30
Leu Gly Ser Asn Asn Met Tyr Asp Ile Phe Asn Leu Asn Asp Lys Ala
        35                  40                  45
Leu Cys Phe Thr Lys Cys Arg Gln Ser Gly Ser Asp Ser Cys Asn Val
    50                  55                  60
Glu Asn Leu Gln Arg Tyr Trp Leu Asn Tyr Glu Ala His Leu Met Lys
65                  70                  75                  80
Glu Gly Leu Thr Gln Lys Val Asn Thr Pro Phe Leu Lys Ala Leu Val
                85                  90                  95
Gln Asn Leu Ser Thr Asn Thr Ala Glu Asp Phe Tyr Phe Ser Leu Glu
            100                 105                 110
Pro Ser Gln Val Pro Arg Gln Val Met Lys Asp Glu Asp Lys Pro Pro
        115                 120                 125
Asp Arg Val Arg Leu Pro Lys Ser Leu Phe Arg Ser Leu Pro Gly Asn
    130                 135                 140
Arg Ser Val Val Arg Leu Ala Val Thr Ile Leu Asp Ile Gly Pro Gly
145                 150                 155                 160
Thr Leu Phe Lys Gly Pro Arg Leu Gly Leu Gly Asp Gly Ser Gly Val
                165                 170                 175
Leu Asn Asn Arg Leu Val Gly Leu Ser Val Gly Gln Met His Val Thr
            180                 185                 190
Lys Leu Ala Glu Pro Leu Glu Ile Val Phe Ser His Gln Arg Pro Pro
        195                 200                 205
Pro Asn Met Thr Leu Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr
    210                 215                 220
Thr Gly Asp Trp Ser Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu
225                 230                 235                 240
Gly Thr Val Cys Cys Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu
                245                 250                 255
Arg Pro Thr Leu Asp Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser
            260                 265                 270
Gln Ala Gly Cys Gly Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile
        275                 280                 285
Leu Tyr Ala Phe Leu Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp
    290                 295                 300
Ala Pro Lys Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn
305                 310                 315                 320
Leu Ala Phe Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala
                325                 330                 335
Ala Cys Trp Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala
            340                 345                 350
Phe Thr Trp Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val
        355                 360                 365
Arg Val Phe Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu
    370                 375                 380
Val Gly Trp Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala
385                 390                 395                 400
Asn Ser Tyr Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser
                405                 410                 415
Leu Glu Leu Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr
            420                 425                 430
Ile Thr Val His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val
        435                 440                 445
Val Leu Ala Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr
```

```
    450                 455                 460
Ala Val Lys Glu Arg Gly Lys Asn Arg Cys Ser Pro Cys Trp Ala Ser
465                 470                 475                 480
Arg Ala Trp Trp Val
                485
```

<210> 35
<211> 828
<212> DNA
<213> Homo sapiens

<400> 35

```
atgaccctca cctgtgtatt ctgggatgtg actaaaggga ccactggaga ctggtcttct      60
gagggctgct ccacggaggt cagacctgag gggaccgtgt gctgctgtga ccacctgacc     120
tttttcgccc tgctcctgag acccaccttg gaccagtcca cggtgcatat cctcacacgc     180
atctcccagg cgggctgtgg ggtctccatg atcttcctgg ccttcaccat tattctttat     240
gcctttctga ggctttcccg ggagaggttc aagtcagaag atgcccaaa gatccacgtg      300
gccctgggtg gcagcctgtt cctcctgaat ctggccttct tggtcaatgt ggggagtggc     360
tcaaaggggt ctgatgctgc ctgctgggcc cgggggctg tcttccacta cttcctgctc      420
tgtgccttca cctggatggg ccttgaagcc ttccacctct acctgctcgc tgtcagggtc     480
ttcaacacct acttcgggca ctacttcctg aagctgagcc tggtgggctg gggcctgccc     540
gccctgatgg tcatcggcac tgggagtgcc aacagctacg gcctctacac catccgtgat     600
agggagaacc gcacctctct ggagctatgc tggttccgtg aagggacaac catgtacgcc     660
ctctatatca ccgtccacgg ctacttcctc atcaccttcc tctttggcat ggtggtcctg     720
gccctggtgg tctggaagat cttcaccctg tcccgtgcta cagcggtcaa ggagcggggg     780
aagaaccggt gctcaccctg ctgggcctct cgagcctggt gggtgtga                  828
```

<210> 36
<211> 275
<212> PRT
<213> Homo sapiens

<400> 36

```
Met Thr Leu Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr Thr Gly
 1               5                  10                  15
Asp Trp Ser Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu Gly Thr
            20                  25                  30
Val Cys Cys Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu Arg Pro
        35                  40                  45
Thr Leu Asp Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser Gln Ala
    50                  55                  60
Gly Cys Gly Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile Leu Tyr
65                  70                  75                  80
Ala Phe Leu Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro
                85                  90                  95
Lys Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala
            100                 105                 110
Phe Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys
        115                 120                 125
Trp Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr
    130                 135                 140
Trp Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val
145                 150                 155                 160
Phe Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly
                165                 170                 175
Trp Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser
```

```
            180                 185                 190
Tyr Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu
        195                 200                 205
Leu Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr
    210                 215                 220
Val His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu
225                 230                 235                 240
Ala Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val
                245                 250                 255
Lys Glu Arg Gly Lys Asn Arg Cys Ser Pro Cys Trp Ala Ser Arg Ala
            260                 265                 270
Trp Trp Val
        275
```

<210> 37
<211> 1011
<212> DNA
<213> Homo sapiens

<400> 37

```
atggcccctt ctgcagcctg gcctccccga tctccccttt cacagggccc ccggctcggc      60
ctgggagatg gcagccggcgt gttgaacaat cgcctggtgg gtttgagtgt gggacaaatg     120
catgtcacca agctggctga gcctctggag atcgtcttct ctcaccagcg accgcccccct     180
aacatgaccc tcacctgtgt attctgggat gtgactaaag ggaccactgg agactggtct      240
tctgagggct gctccacgga ggtcagacct gaggggaccg tgtgctgctg tgaccacctg     300
acctttttcg ccctgctcct gagacccacc ttggaccagt ccacggtgca tatcctcaca      360
cgcatctccc aggcgggctg tggggtctcc atgatcttcc tggccttcac cattattctt     420
tatgcctttc tgaggctttc ccgggagagg ttcaagtcag aagatgcccc aaagatccac     480
gtggccctgg gtggcagcct gttcctcctg aatctggcct tcttggtcaa tgtggggagt     540
ggctcaaagg ggtctgatgc tgcctgctgg gcccgggggg ctgtcttcca ctacttcctg     600
ctctgtgcct tcacctggat gggccttgaa gccttccacc tctacctgct cgctgtcagg     660
gtcttcaaca cctacttcgg gcactacttc ctgaagctga gcctggtggg ctggggcctg     720
cccgccctga tggtcatcgg cactgggagt gccaacagct acggcctcta caccatccgt     780
gatagggaga accgcacctc tctggagcta tgctggttcc gtgaagggac aaccatgtac     840
gccctctata tcaccgtcca cggctacttc ctcatcacct tcctctttgg catggtggtc     900
ctggccctgg tggtctggaa gatcttcacc ctgtcccgtg ctacagcggt caaggagcgg     960
gggaagaacc ggtgctcacc ctgctgggcc tctcgagcct ggtgggtgtg a              1011
```

<210> 38
<211> 336
<212> PRT
<213> Homo sapiens

<400> 38

```
Met Ala Pro Ser Ala Ala Trp Pro Pro Arg Ser Pro Leu Ser Gln Gly
 1               5                  10                  15
Pro Arg Leu Gly Leu Gly Asp Gly Ser Gly Val Leu Asn Asn Arg Leu
            20                  25                  30
Val Gly Leu Ser Val Gly Gln Met His Val Thr Lys Leu Ala Glu Pro
        35                  40                  45
Leu Glu Ile Val Phe Ser His Gln Arg Pro Pro Pro Asn Met Thr Leu
    50                  55                  60
Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr Thr Gly Asp Trp Ser
65                  70                  75                  80
Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu Gly Thr Val Cys Cys
                85                  90                  95
```

```
Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu Arg Pro Thr Leu Asp
                100                 105                 110
Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser Gln Ala Gly Cys Gly
        115                 120                 125
Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile Leu Tyr Ala Phe Leu
    130                 135                 140
Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro Lys Ile His
145                 150                 155                 160
Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala Phe Leu Val
                165                 170                 175
Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys Trp Ala Arg
            180                 185                 190
Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr Trp Met Gly
        195                 200                 205
Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val Phe Asn Thr
    210                 215                 220
Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly Trp Gly Leu
225                 230                 235                 240
Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser Tyr Gly Leu
                245                 250                 255
Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu Leu Cys Trp
            260                 265                 270
Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr Val His Gly
        275                 280                 285
Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu Ala Leu Val
    290                 295                 300
Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val Lys Glu Arg
305                 310                 315                 320
Gly Lys Asn Arg Cys Ser Pro Cys Trp Ala Ser Arg Ala Trp Trp Val
                325                 330                 335
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<210> 39
<211> 633
<212> DNA
<213> Homo sapiens

<400> 39
atgggagctc cccatgggag ctgtggcccc ttggggcctc ttatttctca ccccaggctt 60
tcccgggaga ggttcaagtc agaagatgcc ccaaagatcc acgtggccct gggtggcagc 120
ctgttcctcc tgaatctggc cttcttggtc aatgtgggga gtggctcaaa ggggtctgat 180
gctgcctgct gggccccggg ggctgtcttc cactacttcc tgctctgtgc cttcacctgg 240
atgggccttg aagccttcca cctctacctg ctcgctgtca gggtcttcaa cacctacttc 300
gggcactact tcctgaagct gagcctggtg ggctggggcc tgcccgccct gatggtcatc 360
ggcactggga gtgccaacag ctacggcctc tacaccatcc gtgataggga gaaccgcacc 420
tctctggagc tatgctggtt ccgtgaaggg acaaccatgt acgccctcta tatcaccgtc 480
cacggctact tcctcatcac cttcctcttt ggcatggtgg tcctggccct ggtggtctgg 540
aagatcttca ccctgtcccg tgctacagcg gtcaaggagc gggggaagaa ccggtgctca 600
ccctgctggg cctctcgagc ctggtgggtg tga 633

<210> 40
<211> 210
<212> PRT
<213> Homo sapiens

<400> 40
Met Gly Ala Pro His Gly Ser Cys Gly Pro Leu Gly Pro Leu Ile Ser

```
 1               5                  10                  15
His Pro Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro Lys
            20                  25                  30
Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala Phe
        35                  40                  45
Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys Trp
    50                  55                  60
Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr Trp
65                  70                  75                  80
Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val Phe
                85                  90                  95
Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly Trp
            100                 105                 110
Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser Tyr
        115                 120                 125
Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu Leu
    130                 135                 140
Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr Val
145                 150                 155                 160
His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu Ala
                165                 170                 175
Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val Lys
            180                 185                 190
Glu Arg Gly Lys Asn Arg Cys Ser Pro Cys Trp Ala Ser Arg Ala Trp
        195                 200                 205
Trp Val
    210
```

<210> 41
<211> 420
<212> DNA
<213> Homo sapiens

<400> 41

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atggggcaaa tgaaacatgt ctttgaggtc actttggcat taaagagaca ccagactgga      60
gccaggtggc ggcccctccc acagcgggag agccagggat tgatgggtgg aaatgggaga     120
ggcaccttca cagacagaaa agctcagcca ggggacttcc tgggtttgct ggccagaggt     180
accactccca gtcccaccac agctgccccc tcctccagat gctggttccg tgaagggaca     240
accatgtacg ccctctatat caccgtccac ggctacttcc tcatcacctt cctctttggc     300
atggtggtcc tggccctggt ggtctggaag atcttcaccc tgtcccgtgc tacagcggtc     360
aaggagcggg ggaagaaccg gtgctcaccc tgctgggcct ctcgagcctg gtgggtgtga     420
```

<210> 42
<211> 139
<212> PRT
<213> Homo sapiens

<400> 42

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Met Gly Gln Met Lys His Val Phe Glu Val Thr Leu Ala Leu Lys Arg
 1               5                  10                  15
His Gln Thr Gly Ala Arg Trp Arg Pro Leu Pro Gln Arg Glu Ser Gln
            20                  25                  30
Gly Leu Met Gly Gly Asn Gly Arg Gly Thr Phe Thr Asp Arg Lys Ala
        35                  40                  45
Gln Pro Gly Asp Phe Leu Gly Leu Leu Ala Arg Gly Thr Thr Pro Ser
    50                  55                  60
```

Pro Thr Thr Ala Ala Pro Ser Ser Arg Cys Trp Phe Arg Glu Gly Thr
65   70   75   80
Thr Met Tyr Ala Leu Tyr Ile Thr Val His Gly Tyr Phe Leu Ile Thr
                85   90   95
Phe Leu Phe Gly Met Val Val Leu Ala Leu Val Val Trp Lys Ile Phe
            100   105   110
Thr Leu Ser Arg Ala Thr Ala Val Lys Glu Arg Gly Lys Asn Arg Cys
        115   120   125
Ser Pro Cys Trp Ala Ser Arg Ala Trp Trp Val
    130   135

<210> 43
<211> 1650
<212> DNA
<213> Homo sapiens

<400> 43
atggcgacgc ccaggggcct gggggccctg ctcctgctcc tcctgctccc gacctcaggt   60
caggaaaagc ccaccgaagg gccaagaaac acctgcctgg ggagcaacaa catgtacgac   120
atcttcaact tgaatgacaa ggctttgtgc ttcaccaagt gcaggcagtc gggcagcgac   180
tcctgcaatg tggaaaactt gcagagatac tggctaaact acgaggccca tctgatgaag   240
gaaggtttga cgcagaaggt gaacacgcct ttcctgaagg ctttggtcca gaacctcagc   300
accaacactg cagaagactt ctatttctct ctggagccct ctcaggttcc gaggcaggtg   360
atgaaggacg aggacaagcc ccctgacaga gtgcgacttc ccaagagcct tttcgatcc   420
ctgccaggca acaggtctgt ggtccgcttg gccgtcacca ttctggacat tggtccaggg   480
actctcttca agggcccccg gctcggcctg ggagatggca gcggcgtgtt gaacaatcgc   540
ctggtgggtt tgagtgtggg acaaatgcat gtcaccaagc tggctgagcc tctggagatc   600
gtcttctctc accagcgacc gccccctaac atgaccctca cctgtgtatt ctgggatgtg   660
actaaaggga ccactggaga ctggtcttct gagggctgct ccacggaggt cagacctgag   720
gggaccgtgt gctgctgtga ccacctgacc tttttcgccc tgctcctgag acccaccttg   780
gaccagtcca cggtgcatat cctcacacgc atctcccagg cgggctgtgg ggtctccatg   840
atcttcctgg ccttcaccat tattctttat gcctttctga ggctttcccg ggagaggttc   900
aagtcagaag atgccccaaa gatccacgtg gccctgggtg gcagcctgtt cctcctgaat   960
ctggccttct tggtcaatgt ggggagtggc tcaaaggggt ctgatgctgc ctgctgggcc   1020
cggggggctg tcttccacta cttcctgctc tgtgccttca cctggatggg ccttgaagcc   1080
ttccacctct acctgctcgc tgtcagggtc ttcaacacct acttcgggca ctacttcctg   1140
aagctgagcc tggtgggctg gggcctgccc gccctgatgg tcatcggcac tgggagtgcc   1200
aacagctacg gcctctacac catccgtgat agggagaacc gcacctctct ggagctatgc   1260
tggttccgtg aagggacaac catgtacgcc ctctatatca ccgtccacgg ctacttcctc   1320
atcaccttcc tctttggcat ggtggtcctg gccctggtgg tctggaagat cttcaccctg   1380
tcccgtgcta cagcggtcaa ggagcggggg aagaaccgga agaaggtgct caccctgctg   1440
ggcctctcga gcctggtggg tgtgacatgg gggttggcca tcttcacccc gttgggcctc   1500
tccaccgtct acatctttgc acttttcaac tccttgcaag gtgtcttcat ctgctgctgg   1560
ttcaccatcc tttacctccc aagtcagagc accacagtct cctcctctac tgcaagattg   1620
gaccaggccc actccgcatc tcaagaatag   1650

<210> 44
<211> 549
<212> PRT
<213> Homo sapiens

<400> 44
Met Ala Thr Pro Arg Gly Leu Gly Ala Leu Leu Leu Leu Leu Leu Leu
 1   5   10   15
Pro Thr Ser Gly Gln Glu Lys Pro Thr Glu Gly Pro Arg Asn Thr Cys
            20   25   30

```
Leu Gly Ser Asn Asn Met Tyr Asp Ile Phe Asn Leu Asn Asp Lys Ala
        35                  40                  45
Leu Cys Phe Thr Lys Cys Arg Gln Ser Gly Ser Asp Ser Cys Asn Val
    50                  55                  60
Glu Asn Leu Gln Arg Tyr Trp Leu Asn Tyr Glu Ala His Leu Met Lys
65                  70                  75                  80
Glu Gly Leu Thr Gln Lys Val Asn Thr Pro Phe Leu Lys Ala Leu Val
                85                  90                  95
Gln Asn Leu Ser Thr Asn Thr Ala Glu Asp Phe Tyr Phe Ser Leu Glu
            100                 105                 110
Pro Ser Gln Val Pro Arg Gln Val Met Lys Asp Glu Asp Lys Pro Pro
        115                 120                 125
Asp Arg Val Arg Leu Pro Lys Ser Leu Phe Arg Ser Leu Pro Gly Asn
    130                 135                 140
Arg Ser Val Val Arg Leu Ala Val Thr Ile Leu Asp Ile Gly Pro Gly
145                 150                 155                 160
Thr Leu Phe Lys Gly Pro Arg Leu Gly Leu Gly Asp Gly Ser Gly Val
                165                 170                 175
Leu Asn Asn Arg Leu Val Gly Leu Ser Val Gly Gln Met His Val Thr
            180                 185                 190
Lys Leu Ala Glu Pro Leu Glu Ile Val Phe Ser His Gln Arg Pro Pro
        195                 200                 205
Pro Asn Met Thr Leu Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr
    210                 215                 220
Thr Gly Asp Trp Ser Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu
225                 230                 235                 240
Gly Thr Val Cys Cys Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu
                245                 250                 255
Arg Pro Thr Leu Asp Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser
            260                 265                 270
Gln Ala Gly Cys Gly Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile
        275                 280                 285
Leu Tyr Ala Phe Leu Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp
    290                 295                 300
Ala Pro Lys Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn
305                 310                 315                 320
Leu Ala Phe Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala
                325                 330                 335
Ala Cys Trp Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala
            340                 345                 350
Phe Thr Trp Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val
        355                 360                 365
Arg Val Phe Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu
    370                 375                 380
Val Gly Trp Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala
385                 390                 395                 400
Asn Ser Tyr Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser
                405                 410                 415
Leu Glu Leu Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr
            420                 425                 430
Ile Thr Val His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val
        435                 440                 445
Val Leu Ala Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr
    450                 455                 460
Ala Val Lys Glu Arg Gly Lys Asn Arg Lys Lys Val Leu Thr Leu Leu
465                 470                 475                 480
```

Gly Leu Ser Ser Leu Val Gly Val Thr Trp Gly Leu Ala Ile Phe Thr
485 490 495
Pro Leu Gly Leu Ser Thr Val Tyr Ile Phe Ala Leu Phe Asn Ser Leu
500 505 510
Gln Gly Val Phe Ile Cys Cys Trp Phe Thr Ile Leu Tyr Leu Pro Ser
515 520 525
Gln Ser Thr Thr Val Ser Ser Ser Thr Ala Arg Leu Asp Gln Ala His
530 535 540
Ser Ala Ser Gln Glu
545

<210> 45
<211> 1020
<212> DNA
<213> Homo sapiens

<400> 45
atgaccctca cctgtgtatt ctgggatgtg actaaaggga ccactggaga ctggtcttct 60
gagggctgct ccacggaggt cagacctgag gggaccgtgt gctgctgtga ccacctgacc 120
tttttcgccc tgctcctgag acccaccttg gaccagtcca cggtgcatat cctcacacgc 180
atctcccagg cgggctgtgg ggtctccatg atcttcctgg ccttcaccat tattctttat 240
gcctttctga ggctttcccg ggagaggttc aagtcagaag atgccccaaa gatccacgtg 300
gccctgggtg gcagcctgtt cctcctgaat ctggccttct tggtcaatgt ggggagtggc 360
tcaaaggggt ctgatgctgc ctgctgggcc cggggggctg tcttccacta cttcctgctc 420
tgtgccttca cctggatggg ccttgaagcc ttccacctct acctgctcgc tgtcagggtc 480
ttcaacacct acttcgggca ctacttcctg aagctgagcc tggtgggctg gggcctgccc 540
gccctgatgg tcatcggcac tgggagtgcc aacagctacg gcctctacac catccgtgat 600
agggagaacc gcacctctct ggagctatgc tggttccgtg aagggacaac catgtacgcc 660
ctctatatca ccgtccacgg ctacttcctc atcaccttcc tctttggcat ggtggtcctg 720
gccctggtgg tctggaagat cttcaccctg tcccgtgcta cagcggtcaa ggagcggggg 780
aagaaccgga agaaggtgct caccctgctg ggcctctcga gcctggtggg tgtgacatgg 840
gggttggcca tcttcacccc gttgggcctc tccaccgtct acatctttgc acttttcaac 900
tccttgcaag gtgtcttcat ctgctgctgg ttcaccatcc tttacctccc aagtcagagc 960
accacagtct cctcctctac tgcaagattg gaccaggccc actccgcatc tcaagaatag 1020

<210> 46
<211> 339
<212> PRT
<213> Homo sapiens

<400> 46
Met Thr Leu Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr Thr Gly
1 5 10 15
Asp Trp Ser Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu Gly Thr
20 25 30
Val Cys Cys Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu Arg Pro
35 40 45
Thr Leu Asp Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser Gln Ala
50 55 60
Gly Cys Gly Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile Leu Tyr
65 70 75 80
Ala Phe Leu Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro
85 90 95
Lys Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala
100 105 110
Phe Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys

115 120 125
Trp Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr
130 135 140
Trp Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val
145 150 155 160
Phe Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly
165 170 175
Trp Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser
180 185 190
Tyr Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu
195 200 205
Leu Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr
210 215 220
Val His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu
225 230 235 240
Ala Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val
245 250 255
Lys Glu Arg Gly Lys Asn Arg Lys Lys Val Leu Thr Leu Leu Gly Leu
260 265 270
Ser Ser Leu Val Gly Val Thr Trp Gly Leu Ala Ile Phe Thr Pro Leu
275 280 285
Gly Leu Ser Thr Val Tyr Ile Phe Ala Leu Phe Asn Ser Leu Gln Gly
290 295 300
Val Phe Ile Cys Cys Trp Phe Thr Ile Leu Tyr Leu Pro Ser Gln Ser
305 310 315 320
Thr Thr Val Ser Ser Ser Thr Ala Arg Leu Asp Gln Ala His Ser Ala
325 330 335
Ser Gln Glu

<210> 47
<211> 1203
<212> DNA
<213> Homo sapiens

<400> 47
atggcccctt ctgcagcctg gcctccccga tctccccttt cacagggccc ccggctcggc 60
ctgggagatg gcagcggcgt gttgaacaat cgcctggtgg gtttgagtgt gggacaaatg 120
catgtcacca agctggctga gcctctggag atcgtcttct ctcaccagcg accgcccccct 180
aacatgaccc tcacctgtgt attctgggat gtgactaaag ggaccactgg agactggtct 240
tctgagggct gctccacgga ggtcagacct gaggggaccg tgtgctgctg tgaccacctg 300
acctttttcg ccctgctcct gagacccacc ttggaccagt ccacggtgca tatcctcaca 360
cgcatctccc aggcgggctg tggggtctcc atgatcttcc tggccttcac cattattctt 420
tatgcctttc tgaggctttc ccgggagagg ttcaagtcag aagatgcccc aaagatccac 480
gtggccctgg gtggcagcct gttcctcctg aatctggcct tcttggtcaa tgtggggagt 540
ggctcaaagg ggtctgatgc tgcctgctgg gcccgggggg ctgtcttcca ctacttcctg 600
ctctgtgcct tcacctggat gggccttgaa gccttccacc tctacctgct cgctgtcagg 660
gtcttcaaca cctacttcgg gcactacttc ctgaagctga gcctggtggg ctggggcctg 720
cccgccctga tggtcatcgg cactgggagt gccaacagct acggcctcta caccatccgt 780
gatagggaga accgcacctc tctggagcta tgctggttcc gtgaagggac aaccatgtac 840
gccctctata tcaccgtcca cggctacttc ctcatcacct tcctctttgg catggtggtc 900
ctggccctgg tggtctggaa gatcttcacc ctgtcccgtg ctacagcggt caaggagcgg 960
gggaagaacc ggaagaaggt gctcaccctg ctgggcctct cgagcctggt gggtgtgaca 1020
tgggggttgg ccatcttcac ccgttgggc ctctccaccg tctacatctt tgcacttttc 1080
aactccttgc aaggtgtctt catctgctgc tggttcacca tcctttacct cccaagtcag 1140
agcaccacag tctcctcctc tactgcaaga ttggaccagg cccactccgc atctcaagaa 1200

<210> 48
<211> 400
<212> PRT
<213> Homo sapiens

<400> 48

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Met Ala Pro Ser Ala Ala Trp Pro Pro Arg Ser Pro Leu Ser Gln Gly
 1               5                  10                  15
Pro Arg Leu Gly Leu Gly Asp Gly Ser Gly Val Leu Asn Asn Arg Leu
            20                  25                  30
Val Gly Leu Ser Val Gly Gln Met His Val Thr Lys Leu Ala Glu Pro
        35                  40                  45
Leu Glu Ile Val Phe Ser His Gln Arg Pro Pro Pro Asn Met Thr Leu
    50                  55                  60
Thr Cys Val Phe Trp Asp Val Thr Lys Gly Thr Thr Gly Asp Trp Ser
65                  70                  75                  80
Ser Glu Gly Cys Ser Thr Glu Val Arg Pro Glu Gly Thr Val Cys Cys
                85                  90                  95
Cys Asp His Leu Thr Phe Phe Ala Leu Leu Leu Arg Pro Thr Leu Asp
            100                 105                 110
Gln Ser Thr Val His Ile Leu Thr Arg Ile Ser Gln Ala Gly Cys Gly
        115                 120                 125
Val Ser Met Ile Phe Leu Ala Phe Thr Ile Ile Leu Tyr Ala Phe Leu
    130                 135                 140
Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro Lys Ile His
145                 150                 155                 160
Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala Phe Leu Val
                165                 170                 175
Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys Trp Ala Arg
            180                 185                 190
Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr Trp Met Gly
        195                 200                 205
Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val Phe Asn Thr
    210                 215                 220
Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly Trp Gly Leu
225                 230                 235                 240
Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser Tyr Gly Leu
                245                 250                 255
Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu Leu Cys Trp
            260                 265                 270
Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr Val His Gly
        275                 280                 285
Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu Ala Leu Val
    290                 295                 300
Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val Lys Glu Arg
305                 310                 315                 320
Gly Lys Asn Arg Lys Lys Val Leu Thr Leu Leu Gly Leu Ser Ser Leu
                325                 330                 335
Val Gly Val Thr Trp Gly Leu Ala Ile Phe Thr Pro Leu Gly Leu Ser
            340                 345                 350
Thr Val Tyr Ile Phe Ala Leu Phe Asn Ser Leu Gln Gly Val Phe Ile
        355                 360                 365
Cys Cys Trp Phe Thr Ile Leu Tyr Leu Pro Ser Gln Ser Thr Thr Val
    370                 375                 380
```

```
Ser Ser Ser Thr Ala Arg Leu Asp Gln Ala His Ser Ala Ser Gln Glu
385                 390                 395                 400

<210> 49
<211> 825
<212> DNA
<213> Homo sapiens

<400> 49
atgggagctc cccatgggag ctgtggcccc ttggggcctc ttatttctca ccccaggctt      60
tcccgggaga ggttcaagtc agaagatgcc ccaaagatcc acgtggccct gggtggcagc     120
ctgttcctcc tgaatctggc cttcttggtc aatgtgggga gtggctcaaa ggggtctgat     180
gctgcctgct gggcccgggg ggctgtcttc cactacttcc tgctctgtgc cttcacctgg     240
atgggccttg aagccttcca cctctacctg ctcgctgtca gggtcttcaa cacctacttc     300
gggcactact tcctgaagct gagcctggtg ggctggggcc tgcccgccct gatggtcatc     360
ggcactggga gtgccaacag ctacggcctc tacaccatcc gtgataggga gaaccgcacc     420
tctctggagc tatgctggtt ccgtgaaggg acaaccatgt acgccctcta tatcaccgtc     480
cacggctact tcctcatcac cttcctcttt ggcatggtgg tcctggccct ggtggtctgg     540
aagatcttca ccctgtcccg tgctacagcg gtcaaggagc gggggaagaa ccggaagaag     600
gtgctcaccc tgctgggcct ctcgagcctg gtgggtgtga catgggggtt ggccatcttc     660
accccgttgg gcctctccac cgtctacatc tttgcacttt tcaactcctt gcaaggtgtc     720
ttcatctgct gctggttcac catcctttac ctcccaagtc agagcaccac agtctcctcc     780
tctactgcaa gattggacca ggcccactcc gcatctcaag aatag                     825

<210> 50
<211> 274
<212> PRT
<213> Homo sapiens

<400> 50
Met Gly Ala Pro His Gly Ser Cys Gly Pro Leu Gly Pro Leu Ile Ser
 1               5                  10                  15
His Pro Arg Leu Ser Arg Glu Arg Phe Lys Ser Glu Asp Ala Pro Lys
            20                  25                  30
Ile His Val Ala Leu Gly Gly Ser Leu Phe Leu Leu Asn Leu Ala Phe
        35                  40                  45
Leu Val Asn Val Gly Ser Gly Ser Lys Gly Ser Asp Ala Ala Cys Trp
    50                  55                  60
Ala Arg Gly Ala Val Phe His Tyr Phe Leu Leu Cys Ala Phe Thr Trp
65                  70                  75                  80
Met Gly Leu Glu Ala Phe His Leu Tyr Leu Leu Ala Val Arg Val Phe
                85                  90                  95
Asn Thr Tyr Phe Gly His Tyr Phe Leu Lys Leu Ser Leu Val Gly Trp
            100                 105                 110
Gly Leu Pro Ala Leu Met Val Ile Gly Thr Gly Ser Ala Asn Ser Tyr
        115                 120                 125
Gly Leu Tyr Thr Ile Arg Asp Arg Glu Asn Arg Thr Ser Leu Glu Leu
    130                 135                 140
Cys Trp Phe Arg Glu Gly Thr Thr Met Tyr Ala Leu Tyr Ile Thr Val
145                 150                 155                 160
His Gly Tyr Phe Leu Ile Thr Phe Leu Phe Gly Met Val Val Leu Ala
                165                 170                 175
Leu Val Val Trp Lys Ile Phe Thr Leu Ser Arg Ala Thr Ala Val Lys
            180                 185                 190
Glu Arg Gly Lys Asn Arg Lys Lys Val Leu Thr Leu Leu Gly Leu Ser
        195                 200                 205
```

Ser Leu Val Gly Val Thr Trp Gly Leu Ala Ile Phe Thr Pro Leu Gly
    210   215   220
Leu Ser Thr Val Tyr Ile Phe Ala Leu Phe Asn Ser Leu Gln Gly Val
225   230   235   240
Phe Ile Cys Cys Trp Phe Thr Ile Leu Tyr Leu Pro Ser Gln Ser Thr
                245   250   255
Thr Val Ser Ser Ser Thr Ala Arg Leu Asp Gln Ala His Ser Ala Ser
            260   265   270
Gln Glu

<210> 51
<211> 612
<212> DNA
<213> Homo sapiens

<400> 51
atggggcaaa tgaaacatgt ctttgaggtc actttggcat taaagagaca ccagactgga 60
gccaggtggc ggcccctccc acagcgggag agccagggat tgatgggtgg aaatgggaga 120
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